FutureSentry™

Robotic Security Interface

Installation & Setup Manual

Model F-4U

With Universal Camera Mount & Adaptor CCTV Camera **is not included** for this model

This device is protected under

US Patent Number 7327253

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Installation & User Manual – Version 11.6b

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Installation Kit

Inside the main housing you will find a plastic bag that contains the following:

- AC Power Wire Connector (orange in color) for easy connect/disconnect of the 16.5vac -24vac input.
- BNC Female to Female gender changer for option in connecting the camera to your outgoing video signal feed.
- Hex Wrenches (2) for the turret box & turret lock nut.
- Turret Lock Nut wrench.

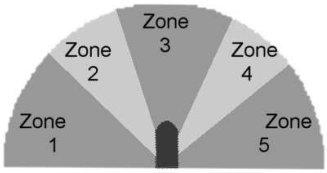
Glossary of Terms

FutureSentry - A robotic device designed to deter crime by mimicking the responses and actions of a competent, live human guard.

Default Settings – Each FutureSentry unit is shipped with certain standard options already selected in the form of default values. These generally represent the most popular selections for each individual option; however they are all subject to change based upon the specifics for site and application. It is suggested that you initially install the unit based upon these default settings and then make adjustments as you become more familiar with the equipment and situation. See page 3 for more details.

Area of Protection … also identified as the **Overall Area of Protection** – This is the area that is protected by a single FutureSentry unit. Since the FutureSentry rotates on a horizontal axis, this area is always some portion of a circular region. The default area is 180º wide which would make the area of protection a half circle. The area of protection can be a large as 330º wide. This means that when the field of view of the camera and the 45º illumination pattern of the lights are considered, the area of protection is virtually a complete circle.

Zone or **Individual Zone** – Within the Area of Protection described above there are multiple zones. The default number of individual zones is 5. As such, each individual zone will be 36º wide in the default setup that covers a total area of protection that is 180º wide. The number of zones desired can be as few as 4 or as many as 8. The drawing on the right shows a default setup of an area of protection that is 180º wide and which is made up of 5 individual zones.



Sensor – The FutureSentry uses various types of sensors to detect activity and report this back to the controller unit inside the FutureSentry. In most cases wireless PIR sensors are used for this role because they are completely self-contained and very easy to install and setup. However any know sensor can be used to communicate with the FutureSentry.

Site Code – If you are using the internal RF receiver contained in each FutureSentry unit, you will need to assign it an individual address in the form of a site code. There are a total of 31 individual site codes available.

Serial Number – The serial number contains a great deal of information about when, where and with what options and settings your FutureSentry was made. If you call for tech support assistance, it will be very handy to have that number available so that the specifics for your unit can be available to the tech support staff.

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Default Settings

The FutureSentry unit that you are about to install was shipped with its optional settings already programmed to their default values. These default values are generally based upon the most accepted preferences used by installers. You have the option of changing all of these defaults to represent the best selections for your unique situation or application. Listed below are the option and default values.

Option	Default Setting	Manual Reference Page
Site Code	**Site Code 2 (of 31)** Switch 1 **ON** Switch 2 **ON** Switch 3 **OFF** Switch 4 **OFF** Switch 5 **OFF**	**9**
Enable/Disable Light during Area-wide Search	**Enabled**	**10**
Light ON During Override Events	**ON**	**10**
Enable / Disable Light Strobe	**Enabled**	**10**
Light Sensor Input	**Disabled**	**10**
Home Zone Options	**None Selected**	**11**
Manual Override Time Options	**30 seconds**	**11**
Overall Size of the Area of Protection	**180º**	**12**
Number of Zones	**5**	**12**
Alarm Output – Factor "A" – Time Duration	**80 seconds**	**12**
Alarm Output – Factor "B" – Number of Inputs	**Disabled**	**12**
Turret Alignment	**Centered**	**13**

All of these optional settings can be changed to represent the best choices for your application. These default settings as well as all available optional settings are addressed in detail beginning on Page 7 of this manual.

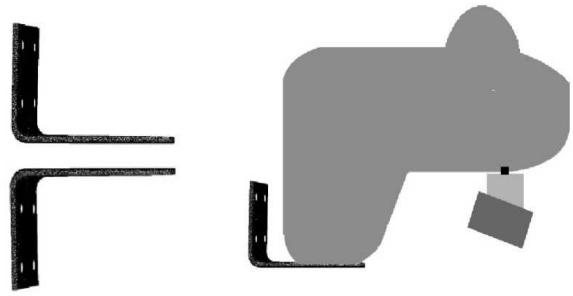
Mounting the *FutureSentry* ™ on the Universal Mount

Each FutureSentry unit comes from the factory with a universal mount that can be used to attach the robot to most any pole or building. That universal mount can be attached facing either UP or down as shown in the drawing below.

↑ UP

↓ DOWN

In most cases however, the installation will appear to look more finished if the mount is attached facing **UP** so that it is concealed by the FutureSentry Robot.



Mounting Bracket Installation Template – *See Last Page (p. 23)*

Mounting the FutureSentry to a Pole

If you are going to mount the FutureSentry to a pole, one option is to use a simple Band-Clamp like the one pictured on the right. These will adapt to either square or round poles and come in many different sizes. ComForce recommends stainless-steel clamps manufactured by Clampco. This company offers a wide variety of different types and sizes for virtually every application. http://www.clampco.com/

Other stainless-steel band clamps made by various manufacturers will also work quite well and in general facilitate an easy installation. However, ComForce does not endorse the use of the more common worm-gear type "hose clamps" and it is recommended that you do not use them as they are not as strong as the aforementioned band-clamps.

Sensor Assignment & Dipswitch Settings Chart

One unique aspect of setting up exterior sensors is that it can be remarkably easy to lose track of those sensors after a year or so. Things in the environment change and sometimes sensors can get lost in the process. For this reason we strongly suggest that you use a sensor chart such as the one shown below to record information about individual sensors. See page 22 of this manual for a copy that you can complete and include in your installation papers.

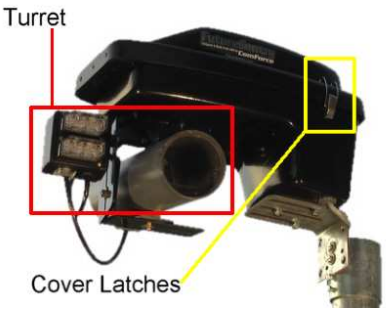
Sensor Location Describe exactly where you mounted the sensor and what it was aimed at.	**Zone** To what **zone** is the sensor assigned?	**Single or Array?** Is this a single sensor zone or are more sensors assigned to this zone?	**Dipswitch Settings** Check the boxes to show the settings of the dipswitches for this sensor. The first 5 boxes will all be the same since they are for the same site code.

Hooking Up the *FutureSentry*™ Robotic Security Guard

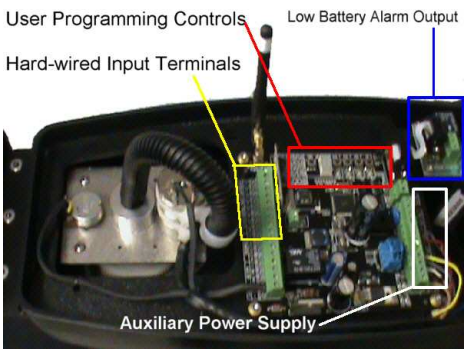
After you have attached the FutureSentry to the universal mount as shown on the previous page, you are **almost** ready to hookup and program the unit. First we need to address a couple of basic principles.

- **Do Not Manually Manipulate or Rotate the Turret.** It has been shipped with the turret in a specific "parked" position and it will automatically correct and realign itself as soon as you boot-up the unit.
- **Important Safety Bulletin:** The motor & drive assembly that powers the turret are probably **strong enough to knock you off a ladder**. **Do not power up the unit until you are absolutely certain that you are away from the rotational path of the turret and/or the camera.** Always be mindful of the rotational path of the turret and camera.
- **Do not connect any auxiliary devices to the controller board's DC power output.** This power is balanced for the requirements of the controller and it is preferable that it not be competing for current with auxiliary components such as CCTV cameras. A separate auxiliary 13vdc power supply has been included in the unit and has already been prewired to supply camera power to the turret.

Accessing the Internal Components

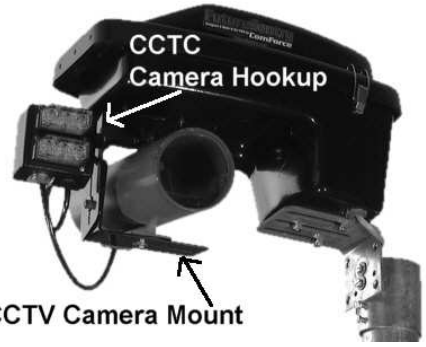


As shown in the picture on the right, the internal components of the FutureSentry can be accessed by disengaging the two stainless-steel latches located on either side of the housing cover. Do not worry that the unit might be accessed by a criminal. Knowing that it is already protected by the finest security guard in the world (itself) we decided to make it easy on the installers and techs by not complicating something that did not need to be complicated. It would have been cheaper to use bolts to secure the cover … but as we said, we were once field techs ourselves and we know what it's like to be up on a ladder.



Inside the FutureSentry housing you will see the sub-assemblies shown in this picture on the right. In the front you will see the drive assembly. In the middle you will see the controller card with its internal RF receiver. To ensure maximum range, please ensure that the antenna is always pointing straight up. It may get "bumped" during the installation and that will tend to reduce the RF reception range.

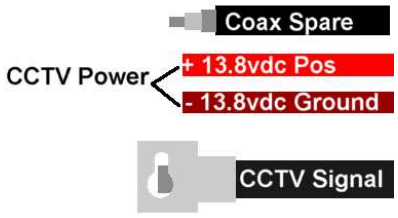
Mounting & Connecting a CCTV Camera to the FutureSentry™



The F4-**U** version of the FutureSentry does not come with a CCTV camera already mounted and connected and is instead fitted with a "**U**niversal" mount that is designed to accept virtually any CCTV Camera that weighs less than twelve (12) lbs. Given the opportunity it would be advisable to mount the camera so that it is as centered and balanced as possible. The drive assembly does contain an ample supply of roller bearings & thrust bearings that are designed to accept & compensate for unbalanced loads; but ultimately the motor life will be extended if the load is centered and balanced. It is therefore recommended that you seek to mount the camera with weight & balance being taken into consideration.

On the turret you will find a housing that supports the two sets of LED Array lights as well as provides an easy means by which to connect the camera. By unscrewing (but not completely removing) the four machine screws located in the rear of that housing (opposite side from the lights) you can gain access to

this housing compartment. After mounting your camera, run the cable for power & signal up through the gray cable-gland located on the base of this turret housing. This oversized compression fitting was selected because it will allow you to insert a camera that is terminated with a BNC connector through the compression fitting without having to remove that connector. However this also means that the opening to that cable-gland compression fitting is larger than is generally required for the average cable. It is recommended that you **seal the compression fitting where the cable enters the turret housing with some silicone** when you complete the installation as this will prevent bugs from taking up residence inside.



Inside the turret housing you will find the individual wires needed to facilitate an easy camera hookup. First locate the **RED** and **BROWN** wires; these are already connected to the unit's auxiliary power supply and will provide approximately 13.8vdc at 750 mA. These two wires will have a single section of heat-shrink tubing over the ends of these wires to keep them from possibly shorting each other. This can be removed by simply cutting the tie-wrap that binds them together and simply pulling it away with your hand. Remember, if the unit is powered up, these wires will be hot.

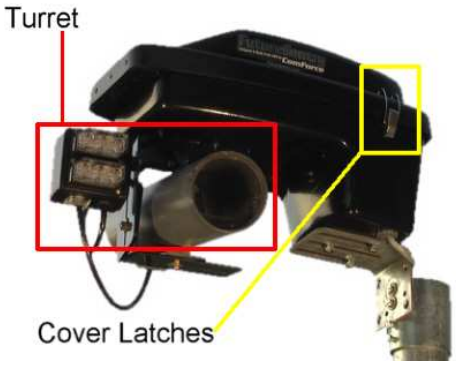
The video signal cable will be obvious; it has a BNC male connector on it already. The video signal is routed via a balun equipped set of 22 gauge twisted wires. This has been done intentionally to deliver the longest possible life to the cable under heavy use conditions.

Finally you will find an additional stranded coaxial cable that has not been terminated. This cable can be used for either the primary video signal or a secondary signal if two cameras are used. The coaxial cable runs through the driveshaft and ends up inside the housing where you will find that it has been secured with a tie-wrap. If you are using only a single camera, it is strongly recommended that you use the existing cable with the BNC connectors already in place.

After connecting power & the video cables; tighten down the compression fitting on the large gray cable gland and add a dab of silicone to the camera-cable where it enters the turret box through that fitting. This will prevent small insects from entering. Finally, re-secure the cover to the turret box.

Accessing the Internal Components

As shown in the picture on the right, the internal components of the FutureSentry can be accessed by disengaging the two stainless-steel latches located on either side of the housing cover.

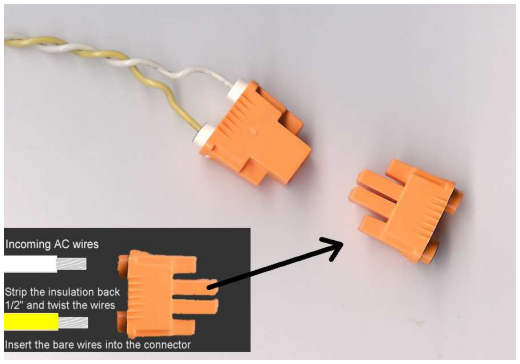


Powering Up for the First Time

The FutureSentry robot has been designed to allow for easy integration into new or existing camera systems and allow for the greatest degree of flexibility for a wide variety of applications. This includes a special AC input hookup system that will make connecting power a snap. It will also provide for an easy means by which to kill power during service and setup.

You will need a source of low-voltage power in order to operate the FutureSentry unit. The robot is designed to operate on AC inputs of between 16.5 VAC and 24 VAC. You should assume a load of at least 40VA for that AC source as this is most common. The unit itself operates on a current draw of approximately ±1 amp @ 13.5 VDC (when the turret is moving and the external LED Array lights are on). The AUX CCTV power supply has already been pre-wired to the turret housing and will provide up to 750 mA @ 13.8 VDC. If you need additional DC power for a specialty camera, you will have to arrange for your own auxiliary DC power source. If you wish to operate your camera off of 24vac and you are using a 24vac power source for the FutureSentry, you can re-route the camera power wires from the AUX power supply to your 24vac input. If you have any questions about this, do not hesitate to contact tech support for assistance.

After you have mounted and connected the camera, it is time to power up the FutureSentry for the first time. Inside the main housing you will find a set of wires that are terminated with an orange connector (see picture on the right). This is the hookup point for your AC input. You will find the matching half of that connector inside the plastic **installation kit** (that was referenced on Page 2) that came with your FutureSentry robot. The AC input connects your 16.5vac - 24vac input to both the main power supply as well as the AUX CCTV camera power supply. Those have already been prewired; all you will have to do will be to attach the orange plastic connector mate that is inside the installation kit to your incoming AC and then simply plug the two connectors together.



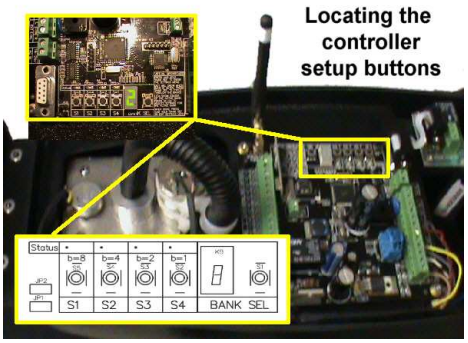
Attaching the AC connector to your wires is very easy. First, using input wires of **at least 18 awg** in size run your AC input through the cable gland on the bottom of the housing. Once inside the housing, allow enough excess wire to facilitate access later if you need it. Strip back about ½" of insulation from your individual input wires and twist each one to improve its strength for the next step. Now, simply insert each individual wire into one of the holes in the connectors as shown in the picture above. Insert the wire firmly into the hole as far as it will go. Then give it a gentle tug to make certain that it caught inside the connector. No other tools are needed; just push the wire into the hole on the connector. If at any point during installation you need to kill power to the unit, you can simply disconnect the two connectors from each other and then reconnect them again when you want to restore power.

Once you have completed the installation it is always advisable to secure the two halves of the AC input plugs together so there is no way they can come apart by accident. Though this is probably impossible, it is always advisable to assume and prepare for the worst. The easiest way to do that would be to simply run a small nylon tie-wrap around the two halves of the connector after they are plugged together. That way the tie-wraps can be easily removed if you need it to be separate the plugs in the future.

When you first power up the FutureSentry it will enter an automated sequence wherein it engages in self analysis and calibration to make certain that everything is setup properly. At the end of this sequence, the external LED Array lights will turn on and it commences the auto-center sequence. From this point on, the robot is "On Duty."

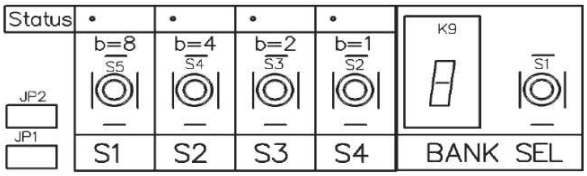
Setting Up the User Selectable Options

If this is the first time that you have ever installed FutureSentry robotic security guard system, up until now in this process you have probably been addressing tasks that are not overly unique. However from this point on you must pay attention to these instructions as you have a number of user-programmable options and you will want to make certain that you properly address these options so as to maximize the effectiveness of the unit for your application.



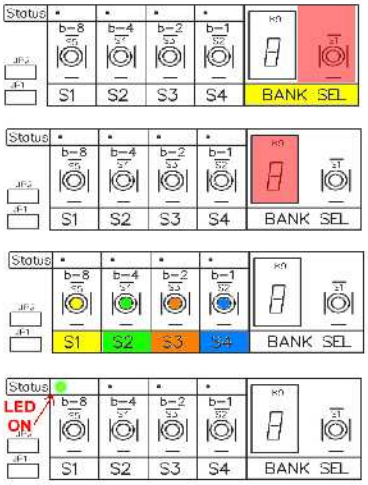
The FutureSentry comes with specific values already programmed as default settings (see page 7) this means that the unit will work perfectly right out of the box if those default settings are what you are looking for. However you will probably want to at least change the site code so read this section carefully.

Inside the main housing you will find a bank of virtual dipswitches that will allow you to select specific functions and options that you wish to assign to your FutureSentry robot. The option switches are located near the antenna and next to the RS232 jack.



In this section we will go through each option; one by one. We will describe the application of each function as well as an explanation of the options. First let's look at how the programmer is used.

On the right side of the Virtual Dipswitch bank you will see a momentary button that is labeled "BANK SEL" … as in "**Select**". This button is used to access and set the options.



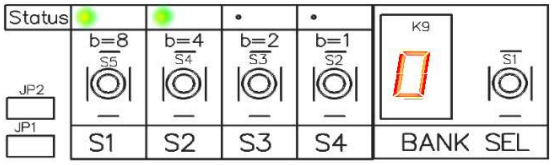
To the left of the "BANK SEL" button you will see the "7 Segment LED Display" that are used to form the digits Θ - 8. This will let you know which bank (or option group) you are currently in so that you can move to the desired bank option.

Even farther left from the 7 Segment LED Display you will see a total of four (4) individual buttons. They are highlighted here in individual colors, but will not display those colors on the card. They are identified as S1 – S2 – S3 – S4. This refers to Switch 1, Switch 2, Switch 3 & Switch 4 respectively.

When a switch in ON, the small status LED above that switch will turn ON as shown in this drawing. If the status LED is OFF, the switch is in the OFF position.

Entering the "Option Setup" Mode

Looking at the drawing below you will see the identifying label "**Bank Select**" on the right side. Above the word "SEL" you will see a momentary push button. To enter the program mode, press and hold that button until the 7 Segment LED Display (K9) turns ON. It will first display the Number Θ (Zero). When the Number Θ (Zero) appears, release the BANK SEL button. The word "Bank" refers to a bank of switches which are generally grouped according to their function. Bank Θ (Zero) refers to the first group of optional settings; which in this case is the Site Code.



When you enter any "bank" you will see the status LEDs will be either ON or OFF. If a status LED above any switch is in fact turned ON it means that switch is in the ON position. This way you will know the status or position of any switch. When you first access this option and open up BANK Θ (Zero) you will see the status LEDs for switches 1 & 2 will turn ON. This means that switches 1 & 2 are ON and represents the default Site Code for all units as they leave the factory.

Bank Θ (Zero) Site Code

If you are using the internal RF receiver to communicate with the FutureSentry you will need to assign a site code to the receiver. This is so other FutureSentry units within range do not disrupt each other. Remember, the transmitters have a range of up to and possibly more than 1,000 feet (depending upon circumstances) so neighboring units cannot share the same site code without having sensors from one site triggering the FutureSentry at another site that is less than 1,000 feet away. There are 31 individual site code options.

The display for each Bank Option will function in this same manner. By pressing the BANK SEL button momentarily again and again, you can advance from Bank Θ to Bank 1 and Bank 2 and so on. In each Bank, the status LEDs that are ON indicate switches that are in the ON position.

Remember, all Bank Options have been preset at the factory to be "default" values. These generally reflect either the most commonly selected settings or those that are recommended. As such, as you enter each new Bank, you will see the status LEDs indicating the ON or OFF positions for the switches associated with those default settings. If the status LED is ON, the switch is ON. If the status LED is OFF, the switch is OFF.

Setting the Individual Site Code for Your *FutureSentry* ™

In most cases the FutureSentry unit communicates with sensors and other devices via an RF transmission. **If you are using an RF Linked sensor or RF transmitter** it is important to setup the individual site code that identifies a specific FutureSentry and isolates it from any neighboring units. Please refer to the following table. The default site code is **№ 2** on the right. It is highlighted in yellow and all FutureSentry units are shipped with this default site code. The site code of all 5 switches being OFF has been blocked and will not respond if programmed to that site code. At least one of the first 5 switches must be ON.

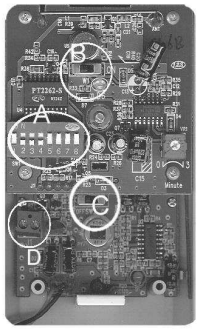
Site Code	SW1	SW2	SW3	SW4	SW5
1	ON	OFF	OFF	OFF	OFF
2 (Default)	ON	ON	OFF	OFF	OFF
3	OFF	ON	OFF	OFF	OFF
4	ON	OFF	ON	OFF	OFF
5	ON	ON	ON	OFF	OFF
6	OFF	ON	ON	OFF	OFF
7	OFF	OFF	ON	OFF	OFF
8	ON	OFF	OFF	ON	OFF
9	ON	ON	OFF	ON	OFF
10	OFF	ON	OFF	ON	OFF
11	OFF	OFF	OFF	ON	OFF
12	ON	OFF	OFF	ON	ON
13	ON	ON	OFF	ON	ON
14	OFF	ON	OFF	ON	ON
15	OFF	OFF	OFF	ON	ON
16	ON	OFF	ON	ON	OFF
17	ON	ON	ON	ON	OFF
18	OFF	ON	ON	ON	OFF
19	OFF	OFF	ON	ON	OFF
20	ON	OFF	OFF	OFF	ON
21	ON	ON	OFF	OFF	ON
22	OFF	ON	OFF	OFF	ON
23	OFF	OFF	OFF	OFF	ON
24	ON	OFF	ON	ON	ON
25	ON	ON	ON	ON	ON
26	OFF	ON	ON	ON	ON
27	OFF	OFF	ON	ON	ON
28	ON	OFF	ON	OFF	ON
29	ON	ON	ON	OFF	ON
30	OFF	ON	ON	OFF	ON
31	OFF	OFF	ON	OFF	ON

So, where is Switch 5 (SW5) when there are only 4 switch options?

In the operator's manual (which of course you have read) we said that this manual was written by field techs … for field techs; and as such, we apologize for this apparently confusing setup procedure. We are limited by space to a maximum of 4 switches and in most cases that is plenty. However in order to access the maximum number of site codes, we needed to have five (5) switches. If we had used only four switches, we would have been limited to a maximum of 15 site codes. By using the fifth switch we more than doubled that number to 31 Site Codes. (This number is based upon a switch having 2 positions; OFF & ON. The value of 2 to the 4th power equals 32; less one because we cannot use the option of all switches being off).

In most cases you will not ever need the fifth switch option as it is unlikely that you will be installing within 1,000 feet of 14 other FutureSentry units. However we felt that we should at least allow field installers the option of a 5th switch and the additional 16 site code options if they wanted to use it.

So, where is the 5th switch? SW5 as shown in the Site Code Chart is actually the first switch (SW1) located in Bank 1. Bank 1 follows Bank Zero (0) in the setup series.



So, why doe we call it SW5 if it is not switch 5? Well, when you get to the point of programming **RF Linked Sensors** in a couple of pages you will see that the sensors do in fact have a single bank of 8 dipswitches and for those sensors, SW5 is in fact Switch #5. See "Item A" in the picture on the right. Since you will be programming far more sensors than controllers, we felt we should make those settings as clear as possible.

To advance from Bank Θ (Zero) to Bank 1, press the BANK SEL button once.

BANK 1 Site Code SW5 – LED Array Light Options

When you are in Bank Θ (Zero) and then press the BANK SEL button one time, you will advance to Bank 1. The 7 Segment LED Display will change from 0 to 1 and the LEDs above switches 1, 2, 3 & 4 will be either ON or OFF based upon how each switch is currently set.

Here are the options for Bank 1.

1. **SW1 Site Code Switch 5 - 5th bit of the SITE CODE** (Corresponding to SW5 on sensor)
   a. As described above, this allows you to use a 5th digit in the site code if you choose.
2. **SW2 Enable/Disable Light during the Area-Wide Search**
   a. During boot-up and at intervals of every 30 minutes following the most recent input activity, the FutureSentry will automatically engage itself and commence a series of rotational moves to the right and then to the left.
   b. These moves start with a zone by zone rotation and then become long, uninterrupted moves from left to right and back.
   c. The purpose of these moves is to further instill in anyone watching the FutureSentry in action that it is human operated and that a guard is engaging in regular "rounds".
   d. The default setting for this option is that the light will turn ON during this Area-Wide search and then turn back OFF when the exercise is completed. As such, the status LED for SW2 will be ON.
   e. If you do not want the light to turn ON during the Area-Wide Search, press SW2 once and the status LED for SW2 will turn OFF. Unless restored in a similar manner, the light will not turn on during Area-Wide Searches.
3. **SW3 Light ON During Override Events**
   a. There is an option for a "Manual Override" of the controller that will allow an operator to manually pan the turret, camera and light either left or right and override the normal guidance of the unit.
   b. The default setting for this option is to have the light turn ON if the manual override is being engaged. The light will then turn OFF automatically when the override event times out. This means that the status LED for SW3 will be ON when you enter Bank 1.
   c. If you do not want the light to turn ON during manual override events, turn that option OFF by pressing SW3 momentarily one time. When the status LED for SW3 goes out you will know that you have now set the light to remain OFF if the manual override is engaged.
4. **SW4 Strobe - Enable / Disable Light Strobe**
   a. The unit is designed to maximize the impact that it has upon anyone in the area by engaging a brief strobe effect of the LED Array lights. This will occur whenever a target is acquired and the turret is not engaged in any other scheduled or triggered activity.
   b. The strobe is designed NOT to come on every time so as to break up any suggestion of an automated pattern.
   c. In most circumstances the strobe is considered desirable and as such the default setting for this is ON.
   d. If you prefer that the strobe not be engaged, press the SW4 button momentarily once and the status LED for SW4 will turn OFF. This will disable the strobe and the light will remain steady when ON.

To advance from Bank 1 to Bank 2, press the BANK SEL button once.

Bank 2 Light Sensor Options

Here are the options for Bank 2.

1. **S1 = Light Sensor Input**
   a. The controller is equipped with an option for using photoconductive resistors (photocells) to alter the way and times that the FutureSentry responds to input activity.
   b. You must have a photocell attached to the proper terminals to use this option.
   c. The lack of a photocell will automatically disable this option altogether.

d. If you have photocell properly installed with the unit, you then have two options for how it is employed.
e. SW1 ON - This switch disables the RF receiver during daylight hours so that the unit will appear to look like and react just as a standard panning or fixed camera … however at night time the receiver is reengaged and the unit will respond normally to sensor inputs.
f. SW1 OFF – If SW1 is OFF, the RF receiver will remain engaged, but the lights will not turn ON except after daylight hours.

2. **SW2 is not used at this time**
3. **SW3 is not used at this time**
4. **SW4 is not used at this time**

To advance from Bank 2 to Bank 3, press the BANK SEL button once.

Bank 3 Home Zone Options

On Page 2 of the Quick Start Guide we discussed the definition of a "Zone".

The FutureSentry has the ability to either engage in continuous panning movements when no activity is present or to return to a specified zone. We call the panning movement "**Sentinel Mode**". The other option is identified as the "**Home Zone**". The default for this option is that the unit **does** engage the Sentinel Mode. When the unit is in Sentinel mode, it will advance to the next zone, approximately once every 20 seconds. This will continue indefinitely until one of the following things occurs:

1. An input from a sensor is received and the unit responds to that input.
2. The Area-Wide Search referenced previously engages automatically at 30 minute intervals.
   a. If the Sentinel Mode is interrupted as part of the scheduled Area-Wide Search, the unit will restore back to Sentinel Mode when that action is completed.

You have the option of selecting any of Zones 1-7 to assign as the "Home Zone". No, there is not an option for using Zone 8; it's a binary code so only 8 options are present and one had to be for the option of selecting the Sentinel action. If the area that you wish to assign as Home Zone is in fact equivalent to Zone 8, adjustments to the turret and zone sizes can be made to result in that equivalent. We will address this in more detail later in this manual.

When a Home Zone is selected, there will be no sentinel activity and the turret will always return to the home zone following any activity. This includes following scheduled Area-Wide Searches. In order to assign Home Zone status to a specific zone, use the following table to identify which switches should be ON or OFF.

SW1	SW2	SW3	SW4	Result
OFF	OFF	OFF	OFF	**Default - No Home Zone Selected – Sentinel Engaged**
OFF	OFF	OFF	ON	**Home Zone is 1**
OFF	OFF	ON	OFF	**Home Zone is 2**
OFF	OFF	ON	ON	**Home Zone is 3**
OFF	ON	OFF	OFF	**Home Zone is 4**
OFF	ON	OFF	ON	**Home Zone is 5**
OFF	ON	ON	OFF	**Home Zone is 6**
OFF	ON	ON	ON	**Home Zone is 7**

To advance from Bank 3 to Bank 4, press the BANK SEL button once.

Bank 4 Manual Override Time Options

The FutureSentry Robotic Security Guard has an option for allowing a user to override the normal Sentinel & Home Zone functions described previously in "Bank 3". When the manual override is engaged, a user can manually rotate the turret either left or right as desired. After releasing the manual override input, the unit will not return to "normal" operation for a specified time period. However, if an input from a sensor is received, the unit **will respond** normally and disengage from the manual override. To set the duration of the time that passes before Sentinel or Home Zone action is restored, select from the following options.

SW1	SW2	SW3	SW4	Result
OFF	OFF	OFF	OFF	Manual override inputs disabled
OFF	OFF	OFF	ON	Override will be active for 60 seconds after the last manual input
OFF	OFF	ON	OFF	Override will be active for 45 seconds after the last manual input
OFF	ON	OFF	OFF	**Default** Override will be active for 30 seconds after the last manual input
ON	OFF	OFF	OFF	Override will be active for 15 seconds after the last manual input

To advance from Bank 4 to Bank 5, press the BANK SEL button once.

Bank 5 Size of Overall the Area of Protection

The width of the overall area of protection is programmable form one of the sixteen following options. The width is recognized to be circular with the FutureSentry being the center of that circle. The default width is 180º wide; but you can expand that to be as big as 330º wide.

To advance from Bank 5 to Bank 6, press the BANK SEL button once.

SW1	SW2	SW3	SW4	BANK-5 Size of Overall Area of Protection
OFF	OFF	OFF	OFF	**Default** - Total Area is 180°Wide
OFF	OFF	OFF	ON	Total Area is 190°Wide
OFF	OFF	ON	OFF	Total Area is 200°Wide
OFF	OFF	ON	ON	Total Area is 210°Wide
OFF	ON	OFF	OFF	Total Area is 220°Wide
OFF	ON	OFF	ON	Total Area is 230°Wide
OFF	ON	ON	OFF	Total Area is 240°Wide
OFF	ON	ON	ON	Total Area is 250°Wide
ON	OFF	OFF	OFF	Total Area is 260°Wide
ON	OFF	OFF	ON	Total Area is 270°Wide
ON	OFF	ON	OFF	Total Area is 280°Wide
ON	OFF	ON	ON	Total Area is 290°Wide
ON	ON	OFF	OFF	Total Area is 300°Wide
ON	ON	OFF	ON	Total Area is 310°Wide
ON	ON	ON	OFF	Total Area is 320°Wide
ON	ON	ON	ON	Total Area is 330°Wide

Bank 6 How Many Zones Will Be Used To Cover the Area of Protection?

You can establish from four to eight zones that will be used to break down the Overall Area of Protection into individual zones. The default number is five (5) zones. To select a different number of zones, use the following chart.

SW1	SW2	SW3	SW4	BANK 6 Total Number of Zones
OFF	OFF	OFF	OFF	4 Total Zones
OFF	OFF	OFF	ON	**Default** - 5 Total Zones
OFF	OFF	ON	OFF	6 Total Zones
OFF	ON	OFF	OFF	7 Total Zones
ON	OFF	OFF	OFF	8 Total Zones

To advance from Bank 6 to Bank 7, press the BANK SEL button once.

Bank 7 Alarm Output – Factor "A" – Time Duration

The Alarm Output is based upon two factors. The first is Factor A which is the time over which you count the number of inputs. The default time period is 80 seconds. This means that the specified number of inputs from sensors must occur during this established 80 second period for an alarm to be triggered. The number of inputs required to trigger an Alarm Output is set in the next Bank; which is Bank 8.

To advance from Bank 6 to Bank 7, press the BANK SEL button once.

SW1	SW2	SW3	SW4	BANK 7 - Time Interval to Count Inputs
OFF	OFF	OFF	OFF	Period is 10 seconds
OFF	OFF	OFF	ON	Period is 20 seconds
OFF	OFF	ON	OFF	Period is 30 seconds
OFF	OFF	ON	ON	Period is 40 seconds
OFF	ON	OFF	OFF	Period is 50 seconds
OFF	ON	OFF	ON	Period is 60 seconds
OFF	ON	ON	OFF	Period is 70 seconds
OFF	ON	ON	ON	**Default** - Period is 80 seconds
ON	OFF	OFF	OFF	Period is 90 seconds
ON	OFF	OFF	ON	Period is 100 seconds
ON	OFF	ON	OFF	Period is 110 seconds
ON	OFF	ON	ON	Period is 120 seconds
ON	ON	OFF	OFF	Period is 130 seconds
ON	ON	OFF	ON	Period is 140 seconds
ON	ON	ON	OFF	Period is 150 seconds
ON	ON	ON	ON	Period is 160 seconds

Bank 8 Alarm Output – Factor "B" Number of Inputs Received

In Bank 7 we determined the time increment over which we would evaluate activity and then consider the number of input triggers that will be required during that time in order to trigger an alarm output. What this means is that both of the thresholds must be achieved for an alarm output to be triggered.

A word of advice to those that might be unfamiliar with exterior motion detection devices; there is a world of very legitimate things that can trigger most sensors. Now this is generally limited to daytime activity and PIRs become exceptionally stable when the sun goes down. During the daytime however, everything from birds to breeze can and will impact such sensors.

If you want to be able to trigger daytime alarms, you must take caution to set your sensors up very carefully so that they will not be impacted by moving branches from trees. If you take your time and set your sensor grid up carefully, you will have minimal issues with apparent false inputs. In reality, these are not false inputs at all because the sensors are doing exactly what they were designed to do … react to moving sources of heat.

In most cases, alarm outputs are never required since the FutureSentry is always the first responder and we encourage you to let it do its job. Most people are more concerned about nighttime activity than daytime and it is very easy to arrange to have alarm outputs shunted during the daytime. This will be addressed in greater detail later in this manual.

The default setting for the Number of Inputs required to trigger an Alarm Output is to have the alarm output function **disabled**. We do this intentionally so that you will carefully consider the environment and the terrain and the conditions before you set this value. We strongly recommend that you set this target value higher than you might otherwise think is necessary. The reason for this is simple; there are many things that can trigger a small number of inputs. These include animals and birds and the like and they never hang around once the FutureSentry comes to life. On the other hand, "people" are the only thing that most users and owners of the FutureSentry are worried about and the presence of a human will generate a great number of inputs over a reasonable short time period. A person moves and reacts slower than animals do …and birds just fly through by accident. People have a very significant heat signature and profile and are quite distinguishable as targets.

One more thing, people react faster to and run from the FutureSentry faster than animals do. Animals are startled and sometimes frightened … but a person that is about to break the law is downright nervous and triggering within them a strong desire not to be captured is easily accomplished … and this is the FutureSentry's entire purpose in life.

Here on the right is a chart for BANK 8 that shows the settings for the number of inputs required to trigger an Alarm Output. Do yourself a favor and set it higher than you think would be required. A moving person can easily chalk up 10-15 sensor inputs within 10 seconds. People have a large heat image, they move slower than animals and they do a lot of moving when the FutureSentry targets them.

SW1	SW2	SW3	SW4	BANK 8 - Number of Inputs Required
OFF	OFF	OFF	OFF	**Default** - Alarm Output Disabled
OFF	OFF	OFF	ON	1 Input will trigger alarm
OFF	OFF	ON	OFF	2 Inputs will trigger alarm
OFF	OFF	ON	ON	3 Inputs will trigger alarm
OFF	ON	OFF	OFF	4 Inputs will trigger alarm
OFF	ON	OFF	ON	5 Inputs will trigger alarm
OFF	ON	ON	OFF	6 Inputs will trigger alarm
OFF	ON	ON	ON	7 Inputs will trigger alarm
ON	OFF	OFF	OFF	8 Inputs will trigger alarm
ON	OFF	OFF	ON	9 Inputs will trigger alarm
ON	OFF	ON	OFF	10 Inputs will trigger alarm
ON	OFF	ON	ON	11 Inputs will trigger alarm
ON	ON	OFF	OFF	12 Inputs will trigger alarm
ON	ON	OFF	ON	13 Inputs will trigger alarm
ON	ON	ON	OFF	14 Inputs will trigger alarm
ON	ON	ON	ON	15 Inputs will trigger alarm

Programming the Options is now complete. To advance from the program mode into the active mode you will need to do now do two things and in this order.

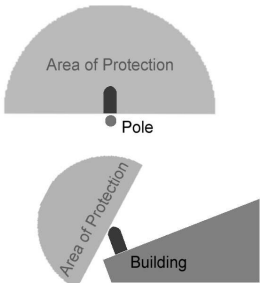
1. PRESS and HOLD the SEL button down until all of the LEDs turn OFF (about 5 seconds).
2. Power down the controller …
   a. The easiest way will be to disconnect the Orange AC power connector that feeds the two power supplies.
   b. Count to 10 …
   c. Restore power.

The FutureSentry will now enter the boot-up phase again; this time having applied all of the data that you just changed in the User Programmable Options.

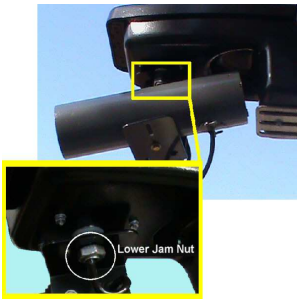
Adjusting the Turret to Fit the Size of the Area of Protection That You Selected

The FutureSentry™ robot was preset at the factory to have an area of protection that is 180º wide and divided into 5 equal zones. If that is the area and coverage that you desire, you may not require any further adjustments for the turret. However, the "center" of the FutureSentry unit may well not be facing what you consider to be the "center" of your area of protection and that can be resolved very easily.

In the drawings on the left we see diagrams of two different installations in which the Area of Protection is 180º wide. In the top drawing the FutureSentry is attached to a pole and the center of the unit matches the center of the Area of protection. However in the lower drawing, the FutureSentry is mounted to a building that does not allow the center of the unit to face the center of the desired Area of Protection.



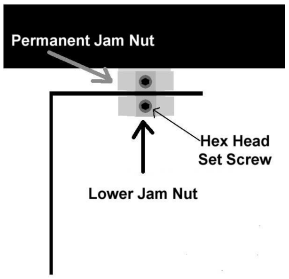
In order to allow the FutureSentry to be mounted on almost any solid surface, it was designed so that the actual turret could be adjusted relative to the drive shaft so that "center" can be anything that the installer wants center to be.



The turret is secured to the driveshaft with two Jam Nuts that are each secured in place with set screws. To adjust the center of the area of protection we need to loosen the Lower Jam Nut on the drive shaft. Included in the Installation Kit is a special wrench that fits the Lower Jam Nut along with a hex wrench for the set screw. The size on Jam Nut is 15/16" (.9375"). The first step is to loosen that bolt with the hex wrench that was included in your **Installation Kit,** and then loosen the Jam Nut.

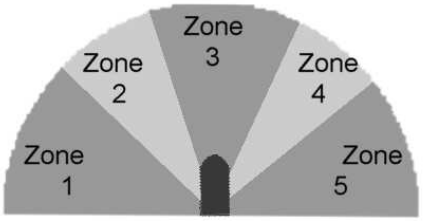
It is very important that you secure the turret before you attempt to loosen or tighten the Lower Jam Nut.

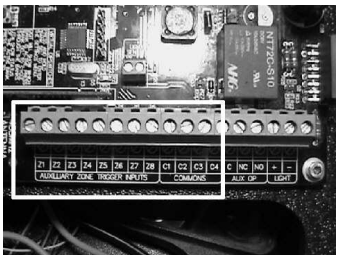
1. First, using the enclosed hex head wrench, loosen the set screw that secures the Lower Jam Nut.
2. While holding the turret firmly in place, use the enclosed Jam Nut Wrench to loosen the Lower Turret Jam Nut just enough to allow the turret to move a little.



Setting Zone 1 (Far Left)

After you slightly loosen the turret lock nut, you should be able to rotate the turret manually, but it should still be secure enough so as to prohibit free spinning of the turret on the driveshaft. Now boot-up the FutureSentry and let it complete its calibration sequence. When the calibration is done, it will commence an Area-Wide Search in which it will travel all the way from left to right and back again. When it moves all the way to the left (from the camera's perspective) you are at Zone 1.





The move to Zone 1 can also be manually triggered by placing a jumper between one of the Common Terminals on the controller card and Input 1 (Z1) on the Auxiliary Input section on the controller. This is shown in the picture on the left. Simply place a momentary short between Zone 1 and Common and the unit will react to face Zone 1.

Once the turret responds to that command to go to Zone 1 and after it has stopped moving left and right, kill the power so that you can work without the turret moving again on its own.

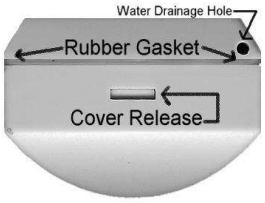
Now rotate the loosened turret with your hand so that it now is facing what you want to be the far left zone … or Zone 1. Remember, Zone 1 is always the first zone, farthest to the left (from the camera's perspective).

After you have identified your Zone 1, all of the remaining zones will automatically align themselves based upon the starting point established by Zone 1.

Now you must lock the turret in place by tightening the Turret Lock Nut. Remember all the warnings about securing the turret when you loosen the Turret Lock Nut? Well we are about to do the same thing again in reverse. Once again, you must make certain that you are tightening the Lock Nut and not forcing the drive shaft to rotate. So once again, secure the turret with either a wrench or with your hand while you tighten the Turret Lock Nut. Make certain that you have locked down the jam nut by tightening the set screw and you are finished. You can now reapply power to the unit and confirm that the settings are as you wanted them to be.

That's it! The FutureSentry unit should be ready to start talking to some sensors.

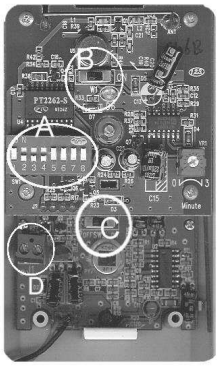
Installing & Programming RF-PIR Sensors



To open the sensor

The sensor cover is easily removed by inserting a small tool into the cover release. With the cover removed you will see a rubber gasket that is important as it keeps moisture out of the sensor. Make sure that this gasket remains in position when the cover is replaced. The view on the right is that of the under-side looking up at the sensor.

Sensor Features



A. **Programming Dipswitches**. All sensors within a single zone need to be set to the same dipswitch settings.
B. **Sensor LED Switch.** This switch turns the sensor LED ON for testing and OFF for operation. It is important to turn this LED switch OFF for normal operation as this will conserve battery life and not draw attention to the location of sensors
C. **IR Sensor Cut-Off Switch**. With this switch turned OFF, the PIR sensor will not function but the radio transmitter will remain available for use with external triggering equipment if desired. This switch should be in the ON position for the PIR to function.
D. **RF Transmitter – External Trigger Terminals**
Using Sensors as Wireless Transmitters. To use the sensor as a wireless transmitter, connect any N/O alarm output or switch to these two terminals **(D)**. This can be used with any common detection device such as a contact switch, push button or even an alternative form of personnel sensor.

Tech Tips:

- **Use the Sensor Chart:** When programming the sensors to a receiver, keep a chart of field sensor dipswitch settings for future reference. A sample chart is included on Page 22 of this manual. This will simplify any future programming or service that may someday be required.
- **Keep Detailed Information About Sensor Locations:** On the Sensor Chart there is a place to record information about the location of each sensor. Installing sensors in an exterior environment has certain unique aspects. Sensors mounted today may become blocked or interfered with by future growth of trees or bushes or even damaged by the discharge from power mowers. **The information that you record and save about the installation may prove invaluable in the future; so provide yourself as much detail as possible**. You will be doing yourself and your clients a favor if you can easily identify and locate sensor locations.

Tips for Sensor Mounting

- Avoid mounting a sensor where it will, at some point in the day, be looking directly into the sun. If possible mount the sensors so that they face either north or south.
- Avoid aiming at anything that can or does move as a result of wind or other force, for example tree branches, leaves, flags or signs.
- The sensors can only "see" what's in front of them; hills, dips and other topographical barricades generally require the use of multiple sensors to achieve the desired protection pattern. You can program an

unlimited number of sensors to the same zone to achieve a customized protection pattern that exactly fits the area you need to cover.

- Animals tend to follow specific trails or paths on a repeated basis. Look for signs of large animal trails and take whatever measures are available to keep sensors aimed away from these areas if possible.

Sensor Batteries:

- Most battery powered sensors are shipped with standard Alkaline Batteries. Alkaline Batteries can be used for setup and testing but **should not** be retained for field operation. **Long life lithium batteries** will perform best as they will deliver approximately one year of uninterrupted service. It is wise to change all of the batteries in all of the sensors whenever any battery at an installation runs low of power.

Programming the Sensors

Inside each sensor transmitter there are **eight (8) dipswitches**. See area "A" in the sensor picture on page 16. Remember, all sensors assigned to the same individual zone and same FutureSentry robot (site code) must all have their dipswitches set the same.

The eight dipswitches inside the sensor all reference specific information as shown in the table below. The first five (5) switches address the site code and the remaining three (3) switches identify to which individual zone that specific sensor will report.

SW1	SW2	SW3	SW4	SW5	SW6	SW7	SW8
Site Code	Site Code	Site Code	Site Code	Site Code	Zone Assignment	Zone Assignment	Zone Assignment

- ALL sensors assigned to a single FutureSentry unit will ALL have the first five switches set the same.
- All sensors within that same Site Code assigned to a single zone will all have the last three switches set the same.
- Think of it as using a basic phone number to make a phone call. The phone number has two elements; the exchange (the first 3 numbers that get you to the general vicinity) and the last 4 numbers that get you to the exact phone you want. In our case, the Site Code is the Exchange and the Zone Code gets you to the exact location you want to look at.

Zone Code Chart

Zone	SW6	SW7	SW8
1	OFF	OFF	OFF
2	OFF	OFF	ON
3	OFF	ON	OFF
4	OFF	ON	ON
5	ON	OFF	OFF
6	ON	OFF	ON
7	ON	ON	OFF
8	ON	ON	ON

Some Examples of Site Codes & Zone Codes

If the Site Code was set to the **DEFAULT** setting which is **Site Code 2** (see pages 3 & 9 of this manual) the Site Code would be the following.

Site Code	SW1 Site Code	SW2 Site Code	SW3 Site Code	SW4 Site Code	SW5 Site Code
2	ON	ON	OFF	OFF	OFF

And if you wanted the sensor to be in **Zone 5** … the zone code would be the following.

Zone	SW6 Zone Code	SW7 Zone Code	SW8 Zone Code
5	ON	OFF	OFF

To achieve this, you would set the **eight dipswitches** inside the sensor to the following.

SW1 Site Code	SW2 Site Code	SW3 Site Code	SW4 Site Code	SW5 Site Code	SW6 Zone Code	SW7 Zone Code	SW8 Zone Code
ON	ON	OFF	OFF	OFF	ON	OFF	OFF

Another Example…

If the Site Code was set to **Site Code 12** (see page 9 of this manual) the **Site Code** would be the following.

Site Code	SW1 Site Code	SW2 Site Code	SW3 Site Code	SW4 Site Code	SW5 Site Code
12	ON	OFF	OFF	ON	ON

And if you wanted the sensor to be in **Zone 3** … the zone code would be the following.

Zone	SW6 Zone Code	SW7 Zone Code	SW8 Zone Code
3	OFF	ON	OFF

To achieve this, you would set the **eight dipswitches** inside the sensor to the following.

SW1 Site Code	SW2 Site Code	SW3 Site Code	SW4 Site Code	SW5 Site Code	SW6 Zone Code	SW7 Zone Code	SW8 Zone Code
ON	OFF	OFF	ON	ON	OFF	ON	OFF

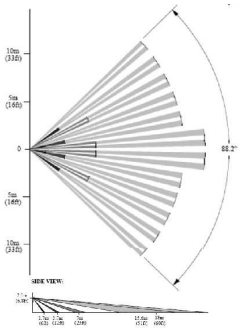
Remember, the dipswitch settings in the sensors are a combination of both the **Site Code** and the **Zone Code** … just like a phone number is a combination of an exchange and the specific number assigned to the telephone.

The First five (5) switches identify the **Site Code** that you assigned to this specific FutureSentry back on page 9. The last three (3) switches identify the **Zone** to which the sensor will be reporting.

Installing the Standard RF-PIR Sensors

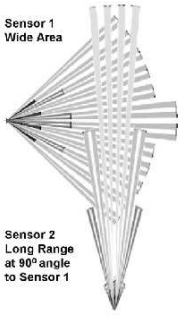
While any sensor can be used to trigger the FutureSentry, the vast majority of installations are setup using the standard RF linked PIR sensor. This is because they are easy to install and relatively inexpensive … this allows for an installation to employ more sensors to cover more area but still remain within the budget for the project.

PIR Sensor Detection Patterns

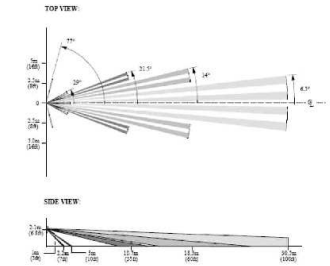


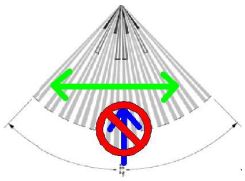
While specialty detection range and pattern sensor lens can be special ordered, most installations will use one of the following lenses and detection patterns.

The standard, wide angle PIR sensor lens covers an area that is approximately 50' deep by 88º wide (as shown in the drawing on the left).



Remember, just like all PIR sensors, the desired direction of the movement that you want to detect is horizontally across the face of the sensor. A target moving directly towards the sensor is far less likely to trigger the sensor since that movement is seen as a constant with no change; while the horizontal travel will be seen by the sensor as a series of changes. When you mount the sensor, try to keep the anticipated direction of travel moving across the face of the sensor and not towards it. If this is not practical, it will be better to use multiple sensors that face in different directions but which all cover the same area. All such sensors should be programmed with their dipswitches set exactly alike.





Pictured on the left is an overview of the Long Range Sensor Lens. It is 100' deep by 13º wide; which makes it longer, but narrower than the standard wide range lens. Like the wide range lens, it is always better to mount them such that traffic moves across the face of the sensor and not towards it.

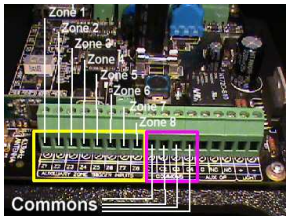
Sensor Mounting Height

The optimum mounting height for PIR sensors is approximately 7'6" above your desired target area. Increasing or decreasing the mounting height will impact the range of that sensor. Use the walk test light inside the sensor to test your sensor; but remember to turn the LED **OFF** when you are done.

Installing Non-Standard Sensors

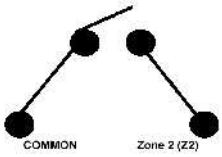
The FutureSentry reacts to activity by employing various types of sensors that communicate with the FutureSentry. As was stated earlier, virtually any sensing or switching device can be used to communicate with the FutureSentry as well.

Hardwiring Sensors into the Controller



You have the option of hardwiring sensors (or switches or anything that you want to generate a trigger input) directly into the controller. To do this, wire your N/0 input with one wire to one of the 4 COMMON terminal positions and your return wire to the zone input that you wish to trigger. If for example, you want to have a hardwired sensor trigger **Zone 2**, install your return wire to the terminal where it is labeled Z2 and the feed wire to any common terminal … C1-C4.

The terminals are labeled "**Auxiliary Zone Trigger Inputs**" and they are located near the antenna and behind the drive assembly. The bank of four (4) **Common** terminals is located right next to the Auxiliary inputs. The individual inputs are labeled as follows.



Terminal Labeled	Triggers Zone Number
Z1	Zone 1
Z2	Zone 2
Z3	Zone 3
Z4	Zone 4
Z5	Zone 5
Z6	Zone 6
Z7	Zone 7
Z8	Zone 8

Using RF Interfaces with Normally Hardwired Devices

You also have the option of using existing or new sensing devices that might normally be hardwired, but to have them communicate with the controller over the same RF frequency as the RF-PIR sensors use. The optional RF Interface will accept either N/0 or N/C input triggers and then communicate that activity to the controller.

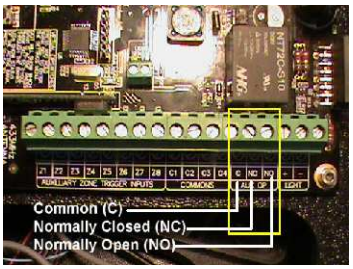
The RF Interface is a self contained unit that is located inside a sealed, NEMA housing. You program the dipswitch setting in the exact same way that you would do so if you were programming an RF-PIR.

Combinations of Sensors

Remember, you can mix and match both hardwired sensors and RF inputs if you choose to do so. As such, a single zone can contain RF-PIR sensors and hardwired sensors and hardwired sensors that are linked via the RF Interface.

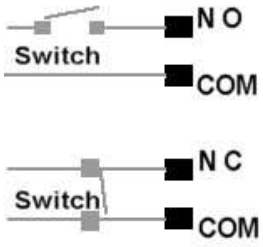
Alarm Output

When you receive the FutureSentry unit the Alarm Output is turned OFF. Please refer to pages 12-13 of the installation Manual for instructions on setting up the Alarm Output.



To connect the Alarm Output as a trigger to another device, connect your wires in the same manner that you would connect any other switched trigger. The Alarm Output provides a dry contact output of both **NO** (normally open) and **NC** (normally closed). The **COM** (Common) terminal feed both the NO & NC as shown in the picture on the right.

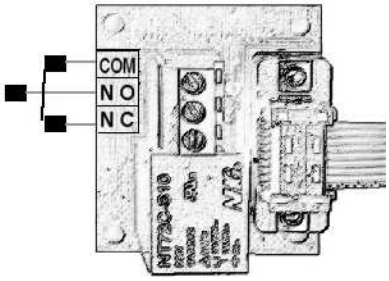
Shunting the Alarm Output



It is not uncommon for end users to desire that the Alarm Output be shunted (turned off) for regularly scheduled times or special events. This can easily be setup by adding a shunt switch between whatever device you are triggering and the Alarm Output terminals. This is demonstrated in the drawing on the right. The drawing on the top applies to a NO (**normally open**) trigger and the drawing on the bottom applies to a NC (**normally closed**) trigger.

Alarm Shunt switches can be anything from a manual switch to a timed switch, or a Photocell (photoconductive resistor) switch. Wiring both the Alarm Output switch and/or the Alarm Shunt switch should be done within the parameters of accepted Security Industry standards and any applicable local regulations.

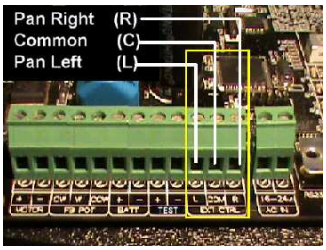
Low Battery Alarm Output



If you are using either the standard wireless PIR sensors or a stand-alone RF transmitter supplied by ComForce the controller will process any low battery condition and supply a low battery alarm output if such a condition is detected. Once again, the hookup of the Low Battery Alarm Output should be done in accordance with Security Industry Standards and any local codes.

The Low Battery Alarm Output is on the small AUX card that is connected to the main controller via the RS232 port on the card. See picture on Page 9 of this manual.

Manual Turret Override



The turret that supports the CCTV camera and the LED Array lights can be manually controlled via the use of any normally open (NO) switch. When continuity is provided between the Common (COM) and the Pan Left (L) terminals, the automated features of the FutureSentry will be overridden and the unit will rotate Left in response to this command and continue panning Left for as long as that continuity is provided.

When continuity is provided between the Common (COM) and the Pan Right (R) terminals, the automated features of the FutureSentry will be overridden and the unit will rotate Right in response to this command and continue panning right for as long as that continuity is provided.

Please refer to Page 11 of this manual for information is setting the Override Delay time in the User Programmable Options. This will set how long the FutureSentry will remain in manual mode before returning

to normal service. If during a manual override event an input is received form either an RF sensor or a hardwired sensor, the FutureSentry will immediately return to normal service and respond normally to that input.

Serial Number

SAMPLE
Serial Number
F4CA1101A1103E1S1
This FutureSentry Robotic Security Device was proudly made in the Commonwealth of Virginia, USA
US Patent Number 7327253

Each FutureSentry unit has been assigned an individual serial number. This number is located inside the housing cover, over the drive assembly. Please record this number on your worksheet and on the Warranty Registration Card. In addition, please have this serial number available whenever you call for technical support as it contains information that will be pertinent to your call.

MANUFACTURER'S LIMITED WARRANTY

Communicated Enforcement, LLC, ("ComForce") warrants its products to be free from defects in material and workmanship under normal use for a period of twelve (12) months from the date of purchase. If the warranted products are returned to ComForce during this period of coverage, ComForce will repair or replace (at its option) without charge those items found to be defective. Any replacement or repaired parts are warranted for the remainder of the original warranty or ninety (90) days, whichever is longer. Outside of the normal warranty period, (or within it if in ComForce's sole judgment the product has been used or installed in a way that voids this Limited Warranty) ComForce will contact the customer with an estimate of the cost of repairs and offer the customer the option of having the unit repaired or buying a new one. The original purchaser must promptly notify its ComForce distributor, in writing during the warranty period, that there is a defect in material or workmanship. All Comforce distributors and dealers have a warranty program and you are expected to return your product with proof of purchase in accordance with such a program. Prior authorization is required before returning the product as ComForce will not accept any shipment for which prior authorization has not first been obtained. ComForce will, at its option, repair or replace without charge, those authorized returned items it finds defective. Please note that this warranty does not cover any software products which are licensed under terms of a separate software license agreement included with the product purchased. The warranty only applies to defects in parts and workmanship relating to ComForce products identified with a ComForce product label and shall not cover transformers, metal boxes, access cards and tags, batteries, tamper kits, spare parts, cables & connectors, temperature sensors, promotional items and displays, and/or freight.

This warranty does not cover damage incurred in shipping or handling, problems that result from external causes such as accident, abuse, and misuse or problems with electrical power failures, or other damage caused by:

- Unapproved peripherals or unauthorized alterations or modifications
- Servicing not authorized by ComForce: the only user-serviced parts of the FutureSentry robotic unit are user programmable options referenced on pages 15-20 of this manual; along with the sensor batteries and dipswitch settings located in the sensors and/or transmitters.
- Usage that is not in accordance with product instructions, including this Manual
- Using accessories, parts or components not supplied or approved for use by ComForce. This does not apply to closed circuit TV cameras and other video Equipment intended for "plug and play" usage.
- Incorrect voltage, power surges and spikes
- lightning strikes, windstorm, floodwaters and any other Acts of God

ComForce's RESPONSIBILITY FOR DEFECTS IN MATERIAL AND WORKMANSHIP IS LIMITED TO REPAIR AND REPLACEMENT OF THE PRODUCT. COMFORCE DOES NOT ACCEPT LIABILITY BEYOND THE REMEDIES PROVIDED FOR IN THIS LIMITED WARRANTY OR FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES, INCLUDING WITHOUT LIMITATION, ANY LIABILITY FOR THIRD PARTY CLAIMS AGAINST YOU FOR DAMAGES. COMFORCE'S MAXIMUM LIABILITY WILL BE NO MORE THAN THE AMOUNT YOU PAID FOR THE PRODUCT THAT IS THE SUBJECT OF THE CLAIM. THE LAWS OF SOME JURISDICTIONS DO NOT ALLOW THE DISCLAIMER OF CONSEQUENTIAL DAMAGES. UNDER SUCH CIRCUMSTANCES, THE LIMITATIONS AND DISCLAIMERS HEREIN SHALL BE TO THE GREATEST EXTENT PERMITTED BY LAW. THIS WARRANTY CONTAINS THE ENTIRE WARRANTY AND SHALL BE IN LIEU OF ANY AND ALL OTHER

WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES AND CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, STATUTORY OR OTHERWISE.

ComForce will not be responsible for any customer fees, taxes or VAT that may be due. For those jurisdictions where the legal minimum warranty exceeds twelve (12) months, this warranty will be equally extended to meet such legal minimum requirement. ComForce does not install or connect the products which may be used in conjunction with other products not manufactured by ComForce; therefore ComForce cannot guarantee or warrant the performance of the security system. ComForce will not be responsible for circumstances resulting from the product's inability to operate. Your security system should be considered as one of many tools available to reduce risk and/or damage caused by burglary, fire or other emergencies. Other tools include, but are not limited to, access controls, lock products, insurance coverage, fire prevention, fire extinguishing devices and sprinkler systems. We strongly recommend that your Future Sentry robotic security system be tested and maintained on a regular basis and that you stay aware of new and improved ComForce products and developments.

Deleted: security alarm

NOTICE: Dealers, installers and/or others selling, distributing or advertising ComForce product(s) are not authorized to modify this warranty or make any additional warranties that are binding on Communicated Enforcement, LLC, or its affiliates. ComForce may change the terms of its limited warranty, at its discretion; without notice.

Warning for Connections to Non-Traditional Telephony (e.g. VoIP)

For those customers who are using a ComForce system connected to a non-traditional telephone system, such as "Voice Over Internet Protocol" (VoIP) that converts the voice signal from your telephone to a digital signal traveling over the Internet, you should be aware that your equipment or other two-way audio system may not function as effectively as with traditional telephone systems. For example, if your VoIP equipment has no battery back-up, during a power failure your system's ability to transmit signals to the central station may be compromised. Or, if your VoIP connection becomes disabled, your telephone line monitoring feature may also be compromised. Other concerns would include, without limitation, Internet connection failures which may be more frequent than regular telephone line outages. We therefore strongly recommend that you discuss these and other limitations involved with operating any kind of security system on a VoIP or other non-traditional telephone system with your installation company. They should be able to offer or recommend measures to reduce the risks involved and give you a better understanding.

This Disclaimer of Warranties and Limited Warranty Is Governed By the Laws of the State of Florida, one of the United States of America.

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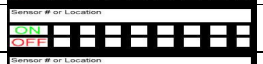
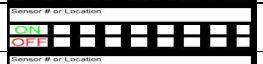
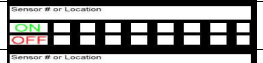
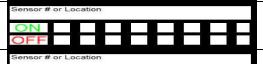
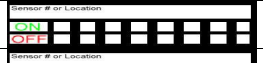
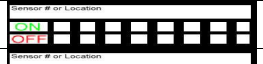
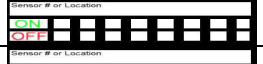
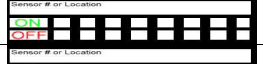
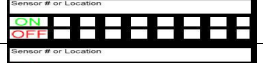
Technical Support

If you wish to contact a member of our technical support staff you can do so by one of the following methods.

- By e-mail: you can send an e-mail to us and it will be directed to the first available tech support person. Make sure that you include your name and phone number in your message and the first available tech support person will call you back.
  - Tech.Support@FutureSentry.com
- By phone: you can call tech support directly at the following number … 305-271-8191 and ask for Tech Support.

Sensor Assignment & Dipswitch Settings Chart

Sensor Location Describe exactly where you mounted the sensor and what it was aimed at.	**Zone** To what **zone** is the sensor assigned?	**Single or Array?** Is this a single sensor zone or are more sensors assigned to this zone?	**Dipswitch Settings** Check the boxes to show the settings of the dipswitches for this sensor. The first 5 boxes will all be the same since they are for the same site code.
			
			
			
			
			
			
			
			
			

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FutureSentry ™

MOUNTING BRACKET INSTALLATION TEMPLATE